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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/779,631 | 02/18/2004 | Hiroshi Yao | 248960US2RDDIV | 9086 |

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| EXAMINER | |
|---|---|
| HARVEY, DAVID E | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2621 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 01/28/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/779,631 | YAO ET AL. | |
| | Examiner | Art Unit | |
| | DAVID E. HARVEY | 2621 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *2-14 and 21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 3* is/are rejected.

7)☒ Claim(s) *4-14 and 21-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

**1. Claims 2-14 and 21-30 are objected to because of the following informalities:**

**A)** In line 8 of claim 2, clarification is needed to indicate as to whether the "each segment" recitation refers back:

1) To "each" of the "segments" stored in the "library storage device" as set forth in lines 3-4 of claim 2;

2) To "each" of the selected "segments" stored in the "cache storage device" as set forth in lines 5-6 of claim 2; or

3) To both of the above.

**B)** In line 8 of claim 3, clarification is needed to indicate as to whether the "each segment" recitation refers back:

1) To "each" of the "segments" stored in the "library storage device" as set forth in lines 3-4 of claim 3;

2) To "each" of the selected "segments" stored in the "cache storage device" as set forth in lines 5-6 of claim 3; or

3) To both of the above.

**Appropriate correction is required.**

**2. The following is noted:**

**A)** With respect to line 7 of claim 2, it is maintained that the "*random access point segment*" terminology of the "random access point segment *information*" recitation constitutes little more than a label in that the claim fails to set forth as to what the "*random access point segment*" terminology actually refers.

**B)** With respect to line 7 of claim 3, it is maintained that the "*random access point segment*" terminology of the "random access point segment *information*" recitation constitutes little more than a label in that the claim fails to set forth as to what the "*random access point segment*" terminology actually refers.

**3.** After further consideration, i.e., in light of the issues set forth above in paragraphs 1 and 2 of this Office action, the examiner takes the position that instant claims 2 and 3 do not avoid the art of record for the following reasons:

> **A)** As set forth in the last Office action (note paragraph 4 thereof), the examiner maintains that hierarchical storage devices, comprised of a "cache memory device" and a larger but slower "mass/library storage device", were notoriously well known in the art (i.e., admitted by the instant disclosure);
>
> **B)** As set forth in the last Office action (note paragraph 4 thereof), the examiner maintains that it was conventional and necessary for such hierarchical storage devices to have included an algorithm for enabling the cache memory device to be filled with selected/pre-fetched "segments" of information from the mass/library storage device that are requested/accessed by an external device/terminal; and
>
> **C)** As illustrated by US Patent #6,098,153 to Fuld et al., that it was known for such cache controlling algorithms to have operated to discard "less recently" requested/accessed segments while retaining the "more recently" requested/accessed segments in an attempts to maintain those segments that are most likely to be requested/accessed in the future in the cache thereby advantageously minimizing access times of the hierarchical storage device **[SEE: lines 30-33 of lines 19-36 in column 1; and lines 35-44 of column 2].**

The examiner contends that, in order for the algorithm to keeps track how recently the respective "segments" in the cache have been requested/accessed, the system must comprise some type of "memory unit" for storing "information" indicative of the time of access for each of the segments: i.e., wherein, the examiner contends, that such "information" corresponds to the recited "random access point segment *information*" of instant claims 2 and 3 in light of that which is set above in paragraphs 1 and 2 of this Office action.

**4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admission of prior art in view of US Patent #6,070,226 to Freeman et al and US Patent #6,098,153 Fuld et al. and one of:**

**A) US Patent #6,463,508 to Wolfe et al.; and**

**B) US Patent #6,144,400 to Ebisawa.**

I. The admitted "prior art":

Under the heading "Description of the Background Art" appearing on pages 1-5 of the instant disclosure, applicant acknowledges that hierarchical storage devices, similar to the type being claimed in claim 1, were known and conventional; i.e. specifically, that it was conventional and known for such hierarchical storage devices to have comprised:

1) A "slow" library storage and retrieval device for storing units of A/V programming;

2) A "faster" cache storage and retrieval device for storing selected portions of the A/V programming obtained from the library so that said portions can be provided "instantaneously", i.e., upon request/demand, to a given user; and

3) A control unit, running a selected one of various known cache management algorithms, in an attempt to keep the most frequently requested portion of the programming cached in the cache memory thereby minimizing overall latency to the user(s).

II. Differences:

Claim 1 differs from the admitted "prior art" in that claim 1 recites:

1) "Sub-dividing" the program/data streams in the library into segments;

2) Providing a memory for storing information pertaining to potential random access points of each of the segments; and

3) Controlling the caching of the segments in the cache memory, via the control unit, according to the stored random access information.

III. The showings of Freeman et al., Fuld et al., Wolfe et al., and Ebisawa:

A) Freeman et al. is cited to evidence the fact that those skilled in the art had indeed recognized the desire to configure "the control unit" of the hierarchical storage devices with an management algorithm which permits the prefetching and caching, in the cache storage device, of the

information from the library storage device that the highest probability of being accessed by the user(s) in the future so as to reduce latency [e.g., note: lines 51-54 of column 1; and lines 5-17 in column 2].
As noted above in paragraph 3 of this Office action, Fuld et al. evidences that is was known to have used such prefetching and caching techniques (i.e., those set forth in Freeman et al.) within the hierarchical storage device environment.

B) As noted in paragraph 1 of this Office action mailed 7/29/2008, it is maintained that each of Wolfe et al. and Ebisawa evidence that it was known to those of ordinary skill in the hierarchical retrieval art to have reduced latency to the user by:

1) Segmenting each of the programs that are to be retrieved upon request by the user; and

2) Prefetching and caching the initial segment of each of the programs being that they represent the initial entry points into said programming (i.e., the "potential random access points").

IV. Obviousness:

A) As evidenced by the showing of Freeman et al. and Fuld et al. the examiner maintains that it would have been obvious to one of ordinary skill in the art to have modified the admitted "prior art" described by applicant so as to have comprised an cache management algorithm for attempting to determine which portions of the data stored in the library memory are most likely to be accessed by the user(s) in the future based on "information" pertaining to how recently the segments have been requested/accessed and, based on this determination/prediction, prefetching and caching said portions in the cache storage device. The examiner maintains that said information required to identify which segments have been most recently requested/accessed would have necessarily stored in a "memory unit" within the storage device.; and

B) In light of the teachings of either one Wolfe et al. and Ebisawa, to have implemented the modification of the admitted prior art, in accordance with the teaching of Freeman et al., by dividing the programs in the library into segments and using an management algorithm that performs said determination/prediction by identifying, prefetching, and caching those of the segments that correspond to the "random access" entry point segments of said programs (i.e., the initial segments of the programs).

**5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admission of prior art in view of US Patent #6,070,226 to Freeman et al and US Patent #6,098,153 Fuld et al. and one of:**

**A) US Patent #6,463,508 to Wolfe et al.; and**

**B) US Patent #6,144,400 to Ebisawa;**

**For the same reasons that were set forth above above for claim 2**

**6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E. HARVEY whose telephone number is (571) 272-7345. The examiner can normally be reached on M-F from 6:00AM to 3PM.**

**If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Marsha D. Banks-Harold, can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.**

**Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).**

**/DAVID E HARVEY/**

**Primary Examiner, Art Unit 2621**

DAVID E HARVEY
Primary Examiner
Art Unit 2621